

Appl. No. 10/006,578
Amtd. Dated 12/16/2003
Reply to Office action of 06/20/2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1: (currently amended) A method of forming a conductive structure in an integrated circuit, comprising the steps of:

forming a dielectric layer over a semiconductor body;
forming a hole in said dielectric layer;
forming a conductive liner in said hole;
annealing said conductive liner;
after annealing said conductive liner, treating said conductive liner with hydrogen;
forming a conductive barrier over said conductive liner; and
after treating the conductive liner with hydrogen, filling said hole with a conductive metal.

Claim 2: (canceled)

Claim 3: (canceled)

Claim 4: (original) The method of claim 1, wherein said treating step comprises a plasma treatment in a hydrogen containing atmosphere.

Claim 5: (original) The method of claim 4, wherein said hydrogen containing atmosphere comprises pure hydrogen.

Claim 6: (original) The method of claim 4, wherein said hydrogen containing atmosphere comprises hydrogen mixed with a carrier gas.

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Claim 7: (original) The method of claim 4, wherein said hydrogen containing atmosphere comprises ammonia.

Claim 8: (original) The method of claim 1, further comprising the step of repeating said treating step prior to said filling step.

Claim 9: (currently amended) A method for forming a contact in an integrated circuit, comprising the steps of:

forming a dielectric layer over a semiconductor body;
etching a contact hole extending through said dielectric layer;
depositing titanium over said dielectric layer, including on exposed surfaces within said contact hole;
annealing said titanium;
treating said titanium with hydrogen prior to said annealing step;
depositing TiN over said titanium; and
then, filling said contact hole with tungsten.

Claim 10: (cancelled).

Claim 11: (original) The method of claim 9, wherein said treating step is performed after said etching step and before said filling step.

Claim 12: (original) The method of claim 9, wherein said treating step comprises a plasma treatment in a hydrogen containing atmosphere.

Claim 13: (original) The method of claim 12, wherein said hydrogen containing atmosphere comprises pure hydrogen.

Claim 14: (original) The method of claim 12, wherein said hydrogen containing atmosphere comprises hydrogen mixed with a carrier gas.

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Claim 15: (original) The method of claim 12, wherein said hydrogen containing atmosphere comprises ammonia.

Claim 16: (original) The method of claim 9, further comprising the step of repeating said treating step prior to said filling step.